



**ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
NOVEMBER 9, 1999 - 9:00 A.M.
EXECUTIVE CONFERENCE ROOM**

Present:	C. T. Maki	J. D. Culp	C. Roberts
	P. F. Miller	J. D. O'Doherty	T. E. Davies
	J. W. Reincke	T. Fort	M. H. Frankhouse
Guests:	C. Bleech	T. Myers	J. T. LaVoy
	J. Ruszkowski	T. Frake	

OLD BUSINESS

1. Approval of the Minutes of the October 8, 1999, Meeting - C. T. Maki

Minutes of the October 8, 1999, meeting were approved as written.

2. Revision of Construction and Technology Publications - J. Ruszkowski

The fall revisions to the Construction Manual, the Michigan Test Methods, and the Materials Quality Assurance Manual are ready for distribution following review by the regions and industry. As department publications, they are being submitted to EOC for review and approval per EOC action of Old Business, Item 2, October 8, 1999.

ACTION: The three documents were approved and will be distributed.

Changes to these documents will continue to be brought to EOC for approval following region and industry review.

Thom Davies requested that any document that has had industry review be so noted.

NEW BUSINESS

1. 2003 Specification Book Committees - J. Ruszkowski

It is time to begin forming the division committees for the 2003 revision of the Standard Specifications for Construction. The committee recommendations, as presented, were put together by Judy with input from all region engineers. Committee chairs were selected with consideration given to meeting an established time schedule, industry review, and publication deadlines. Committee composition considered experience in project development and delivery, as well as technical expertise and core competency in materials and construction.

The process is scheduled to begin in January 2000. Judy will notify committee chairs and members.

ACTION:

- FHWA will appoint their committee reps for Divisions 2, 3, 4 and 8.
- MAPA will be invited to sit on the Division 5 committee.
- MCPA will be invited to sit on the Division 6 committee.
- The attorney general will be contacted for representation for Division 1.
- An impasse committee was formed, and includes Gary Taylor, Jim Culp, Paul Miller and the current region EOC representative or an alternate region engineer as warranted for specific issues.

2. **2003 Specification Book Active Voice Rewrite - J. Ruszkowski**

The task of converting the 2003 Standard Specifications for Construction to active voice - imperative mood will be done under contract. In order to meet the established time frame for the revision, review, and publication of the new book, the conversion process should be done concurrently with the committees' revision process. This will allow the consultant to work with each committee and will ensure that the technical and contractual meaning of specifications is preserved.

A draft work statement has been finalized and will be posted on the bulletin board system.

ACTION: The request to contract the proposed services is approved.

As part of our "cost of doing business", Tom Maki asked that time and costs for revising the specification book be charged to a specific job number for this contractual service and for committee work. Judy will work through Jon Keldsen to establish coding, which will allow costs to be tracked over the next three years.

3. **Research Program Strategic Direction - J. W. Reincke/S. R. Kulkarni**

Following a very successful Research Program Peer Exchange earlier this year, we reaffirmed the necessity for the in-house research program as well as the university contract research program to support the department's program and its strategic objectives. An MDOT Research Program Strategic Direction was drafted and reviewed internally and by the universities through the Michigan Transportation Research Consortium (copy attached). This document will be used to evaluate and approve future research that addresses our critical needs, meets our strategic goals, and provides measurable outcomes. Future research will be carefully scrutinized and compared to the document with emphasis on implementation, delivery on-time and within budget, and benefit savings.

Research focus areas will be continually updated and reviewed. Already underway are efforts to achieve process improvements for the university research program.

ACTION: The Research Program Strategic Direction is approved.

4. **Guidance to Determine Whether an Incentive/Disincentive Clause is Warranted on Construction Projects - J. D. O'Doherty/T. Myers**

A guidance document has been prepared to estimate capacity and determine whether or not an incentive/disincentive (I/D) clause is warranted on construction projects. Specifically, it relates to user delay costs and how they might justify an I/D clause in the contract documents. The document would provide additional guidance for region and TSC personnel involved in the decision making process.

FHWA emphasized that I/D dollar amounts need to be supported by the user cost analysis.

ACTION: EOC approved the guidance document for distribution and placement in the *Traffic and Safety Notes* and the *Maintaining Traffic Typical*s.

5. **Approval of the Construction and Technology Bituminous QC/QA Procedures Manual of Field Testing - M. Frankhouse**

The Bituminous QC/QA Procedures Manual of Field Testing compiles the test procedures for all QC/QA testing and has been updated through the partnering effort of the MDOT/MAPA training committee. The region traveling mix inspectors have reviewed and approved the procedures. Approval of the manual will result in implementation for all bituminous mixtures used on QC/QA projects in the 2000 construction season.

ACTION: The QC/QA Manual is approved and will be applied to the 2000 construction season. An instructional memorandum will be prepared by Mike Frankhouse to give guidance on how the revised QC/QA manual will apply to carryover projects to be completed in 2000.

6. **Geometric Design Guidelines for Federal/State Funded Local Agency Projects - P. F. Miller/T. Frake**

In July of 1996, Director Welke requested that the guidelines be reviewed and updated. The major local concern initially and throughout the review process was bridge width. A task force was formed with representation from the County Road Association of Michigan, the Michigan Municipal League, the consultant sector, FHWA, and MDOT.

The revised document addresses the issues of concern and provides better flexibility in design. It sets the standards for NHS and non-NHS routes.

ACTION: The guidelines are approved and editorial changes clarifying the use on non-NHS projects will be incorporated.

7. **Pavement Selection: I-75 Rehabilitation, C.S. 65041, J.N. 45865; South of Cook Road Northerly to South of M-55**

A Life Cycle Cost Analysis was performed on the two rehabilitation alternates: Alternate 1, rubbilize and bituminous overlay, and Alternate 2, unbonded concrete overlay.

The Pavement Selection Review Committee reviewed the analysis and recommends that Alternate 1, which as the lowest Equivalent Uniform Annual Cost be approved by EOC.

Alternate 1 is approved. The pavement design and cost analysis are as follows:

38 mm	.....	Bituminous Mix 5E10, Top Course (Mainline & Inside Shoulder)
51 mm	.....	Bituminous Mix 4E10, Leveling Course (Mainline & Inside Shoulder)
79 mm	.....	Bituminous Mix 3E10, Base Course (Mainline & Inside Shoulder)
168 mm	.....	Bituminous C Mixes, Outside Shoulder
228 mm	.....	Rubblized Concrete
100 mm	.....	Underdrains
356 mm	.....	Existing Base/Subbase

Present Value Initial Construction Costs \$145,112/Directional Kilometer

Present Value Initial User Costs \$13,229/Directional Kilometer

Present Value Maintenance Costs \$53,259/Directional Kilometer

Equivalent Uniform Annual Cost \$12,017/Directional Kilometer

8. **Pavement Selection: US-24 Reconstruction, C.S. 63031, J.N. 45714; Long Lake Road to Square Lake Road, and C.S. 63052, J.N. 50476 (Southbound Only); Orchard Lake Road to Square Lake Road**

A Life Cycle Cost Analysis was performed on the two rehabilitation alternates: Alternate 1, flexible bituminous pavement, and Alternate 2, jointed reinforced concrete pavement.

The Pavement Selection Review Committee reviewed the analysis and recommends that Alternate 2, which as the lowest Equivalent Uniform Annual Cost be approved by EOC.

Alternate 2 is approved. The pavement design and cost analysis are as follows:

240 mm	Jointed Reinforced Concrete Pavement (8 m Joint Spacing)
100 mm	Open Graded Drainage Course Geotextile Separator
150 mm	Open Graded Underdrains
300 mm	Sand Subbase (J.N. 45714)
452 mm +/-	Existing Sand Subbase (J.N. 50476)

Present Value Initial Construction Costs	\$473,067/Kilometer
Present Value Initial User Costs	\$274,933/Kilometer
Present Value Maintenance Costs	\$36,733/Kilometer
Equivalent Uniform Annual Cost	\$35,557/Kilometer

(Signed Copy on File at C&T/Secondary)
Jon W. Reincke, Secretary
Engineering Operations Committee

JWR:kat

Attachment

cc: EOC Members
Region Engineers

J. R. DeSana	R. J. Risser, Jr. (MCPA)	J. Murner (MRPA)	T. L. Nelson
R. J. Lippert, Jr.	A. C. Milo (MRBA)	J. Ruszkowski	R. D. Till
D. L. Smiley	J. Becsey (MAPA)	C. Libiran	M. Frierson
M. Nystrom (AUC)	D. Hollingsworth (MCA)	G. J. Bukoski	C. W. Whiteside
M. Newman (MAA)	J. Steele (FHWA)	K. Rothwell	T. E. Myers

MDOT Research Program Strategic Direction

Mission	Utilize research to continuously seek ways to improve the quality of transportation services.				
Vision	Conduct applied research and implement findings to support and improve the transportation program objectives				
	Customers <u>Become Customer Driven</u>	Products and Services <u>Deliver Products/Services to Meet our Customers' Most Important Needs</u>		Human Resources <u>Promote Employee Excellence</u>	Organization <u>Support a Flexible and Responsive Organization</u>
Goals	Improve Safety, Traffic Movement & Capacity of Infrastructure	Improve Design, Construction & Maintenance Methods	Improve Material Uses and Quality	Provide Training, Education, and Process Improvement	Develop Effective Research Partnerships
Measurable Outcomes	9. Reduced crash rates 10. Reduced injury and fatality rates 11. Reduced congestion/increased capacity 12. Reduced travel time 13. Reduced tort litigation 14. Reduced operational impacts on facilities 15. Reduced user costs 16. Maximize cost effectiveness* 17. Implementation of research findings	1. Performance of the fix compared to expected design life 2. Reduced reactive maintenance 3. Improve process to deliver projects (i.e., cycle time) 4. Initiates contractor innovation 5. Documented performance 6. Validation by peer review 7. Reduced user costs 8. Improve work zone safety 9. Maximize cost effectiveness* 10. Implementation of research findings	1. Long term performance improvements 2. Improved constructability 3. Reduce construction time 4. Validation by peer review 5. Maximized cost effectiveness* 6. Implementation of research findings	1. Maintain core competencies 2. Develop transportation professionals 3. Provide technical assistance 4. Reduce cycle time 5. Performance of solution 6. Improve motorist safety 7. Customer satisfaction 8. Number of problems solved 9. Maximize cost effectiveness* 10. Technology transfer	1. Develop University Research Centers 2. Involve regions and industry to identify research needs 3. Strive for consensus 4. Encourage public and private research efforts 5. Customer feedback

*Cost Benefit Measures:

- System condition
- Life cycle cost
- Achievement of expected life
- Available funding levels